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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/647,703 | 08/25/2003 | Muhannad S. Bakir | 62020-1260 | 2719 |
| 24504 | 7590 | 11/15/2005 | EXAMINER | |
| THOMAS, KAYDEN, HORSTEMEYER & RISLEY, LLP | | | ROJAS, OMAR R | |
| 100 GALLERIA PARKWAY, NW | | | ART UNIT | |
| STE 1750 | | | PAPER NUMBER | |
| ATLANTA, GA 30339-5948 | | | 2874 | |

DATE MAILED: 11/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

| | | | |
|------------------------------|-----------------|--------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/647,703 | BAKIR ET AL. | |
| | Examiner | Art Unit | |
| | Omar Rojas | 2874 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7-21, 23-32 and 43-74 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 20, 21 and 23-32 is/are allowed.
- 6) ☒ Claim(s) 1, 2, 7, 9-13, 43, 44, 48, 49, 51-53, and 60 is/are rejected.
- 7) ☒ Claim(s) 3-5, 8, 14-19, 45-47, 50, 54-59, and 61-74 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input checked="" type="checkbox"/> Other: <u>Detailed Action</u> . |

DETAILED ACTION

Response to Amendment

1. With regards the amendment filed on September 2, 2005, all the requested changes to the claims have been entered. Claims 1-5, 7-21, 23-32 and 43-74 are pending.

Response to Arguments

2. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Claim Objections

3. Claims 7-9 and 13 are objected to because of the following informalities: Claims 7-9 and 13 are written so as to be dependent upon a cancelled claim (claim 6). Appropriate correction is required. These claims are assumed to be dependent upon claim 1.

4. Claims 23-28 are objected to because of the following informalities: Claims 23-28 are written so as to be dependent upon a cancelled claim (claim 22). Appropriate correction is required. These claims are assumed to be dependent upon claim 20.

5. Claim 1 is objected to because of the following informalities: Claim 1 recites the limitation "the end opposite the first substrate" in line 4 and "the end opposite the second substrate" in the last line. There is insufficient antecedent basis for these limitations in the claim. Appropriate correction is required.

6. Claim 20 is objected to because of the following informalities: Claim 20 recites the limitation "the base of the pillar" and "the end opposite the first substrate" in lines 6-7. There is insufficient antecedent basis for these limitations in the claim. Appropriate correction is required.

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7. Claim 30 is objected to because of the following informalities: Claim 30 recites the limitation "the base of the pillar" and "the end opposite the first substrate" in lines 6-7. There is insufficient antecedent basis for these limitations in the claim. Appropriate correction is required.

8. Claim 31 is objected to because of the following informalities: Claim 31 recites the limitation "the base of the pillar" and "the end opposite the first substrate" in lines 5-6. There is insufficient antecedent basis for these limitations in the claim. Appropriate correction is required.

9. Claim 32 is objected to because of the following informalities: Claim 32 recites the limitation "the base of the pillar" and "the end opposite the first substrate" in lines 6-7. There is insufficient antecedent basis for these limitations in the claim. Appropriate correction is required.

10. Claim 43 is objected to because of the following informalities: Claim 43 recites the limitation "the end opposite the first substrate" in lines 4-5. There is insufficient antecedent basis for this limitation in the claim. Appropriate correction is required.

11. Claim 60 is objected to because of the following informalities: Claim 60 recites the limitation "the end opposite the first substrate" in lines 4-5. There is insufficient antecedent basis for this limitation in the claim. Appropriate correction is required.

Claim Rejections - 35 USC § 102

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

13. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

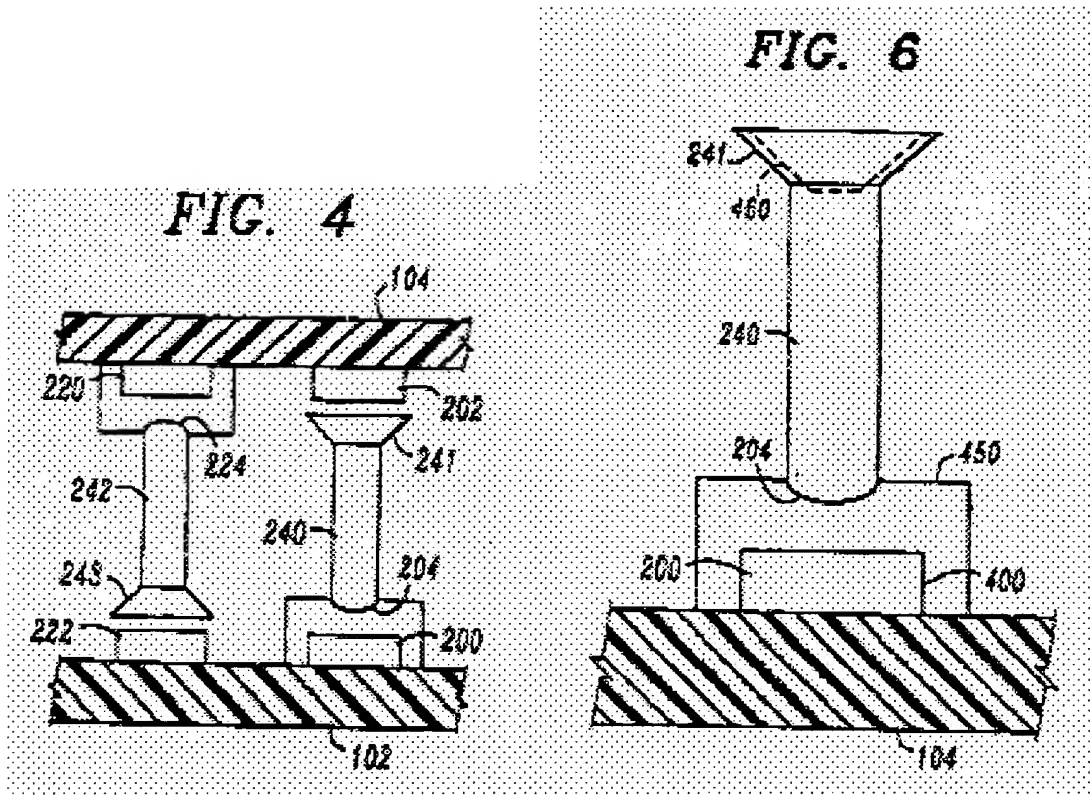
14. Claims 1, 9, and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Patent No. 6,771,846 B2 to Byers et al. ("Byers")

Regarding claim 1, Byers discloses an input/output (I/O) interconnect system, comprising:

a first substrate 450 having at least one compliant pillar/light pipe 240 transversely extending from the first substrate 450, wherein the light pipe 240 comprises a first material, and wherein the light pipe 240 includes a physical well 460 having inclined surfaces at the end opposite the first substrate 450; and

a second substrate 104 having at least one compliant socket (not labeled in Fig. 4, but the socket corresponds to reference numeral 450 in Fig. 6) adapted to receive a light pipe 242, wherein the compliant socket comprises a second material, wherein the compliant socket includes a non-flat top surface at the end opposite the second substrate 104.

Figures 4 and 6 of Byers are reproduced below.



Regarding claim 9, the compliant socket is secured to a light pipe 242 as seen in Figure 4.

Regarding claim 10, see Figure 6 and column 4, lines 20-22 of Byers.

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. **Claim 2 is rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Byers.**

Regarding claim 2, Byers teaches using plastic for the light pipe (col. 3, lines 47-50) but does not expressly mention what type of plastic. Polyimide, for example, is a well-known type of plastic

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material useful for optical waveguides in general. Thus, polyimide would be an inherent material for the light pipe of Byers because Byers teaches plastic. Alternatively, it would be obvious to use a conventional plastic such as polyimide for the light pipe of Byers. Therefore, claim 2 is unpatentable over Byers.

17. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Byers.

The previous remarks concerning Byers and claims 1, 2, 9, and 10 are incorporated herein.

Regarding claim 7, the compliant socket 450 of Byers comprises a housing (col. 4, lines 15-19).

Polyimide, for example, is a well-known type of plastic material useful for making housings because it is temperature-resistant. Thus, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to use at least polyimide for fabricating the compliant socket in Byers because polyimide was a well-known temperature-resistant plastic material useful for making housings. Therefore, claim 7 is unpatentable over Byers.

18. Claims 11-13, 43, 44, 48, 49, and 51-53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Byers as applied to claims 1, 2, 7, 9, and 10 above, and further in view of Patent No. 5,864,642 to Chun et al. ("Chun").

The previous remarks concerning Byers and claims 1, 2, 7, 9, and 10 are incorporated herein.

Byers further differs from claims 11-13, 43, 44, 48, 49, and 51-53 in that Byers does not show a surface relief or volume grating element disposed on the light pipe. Chun teaches a surface relief or volume grating element 222 disposed on an optical waveguide 220. The grating element 222

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disclosed by Chun is advantageous for optical filtering and could easily be adapted to the light pipe of Byers. See Chun at col. 4, lines 13-19. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to obtain the invention specified by claims 11-13, 43, 44, 48, 49, and 51-53.

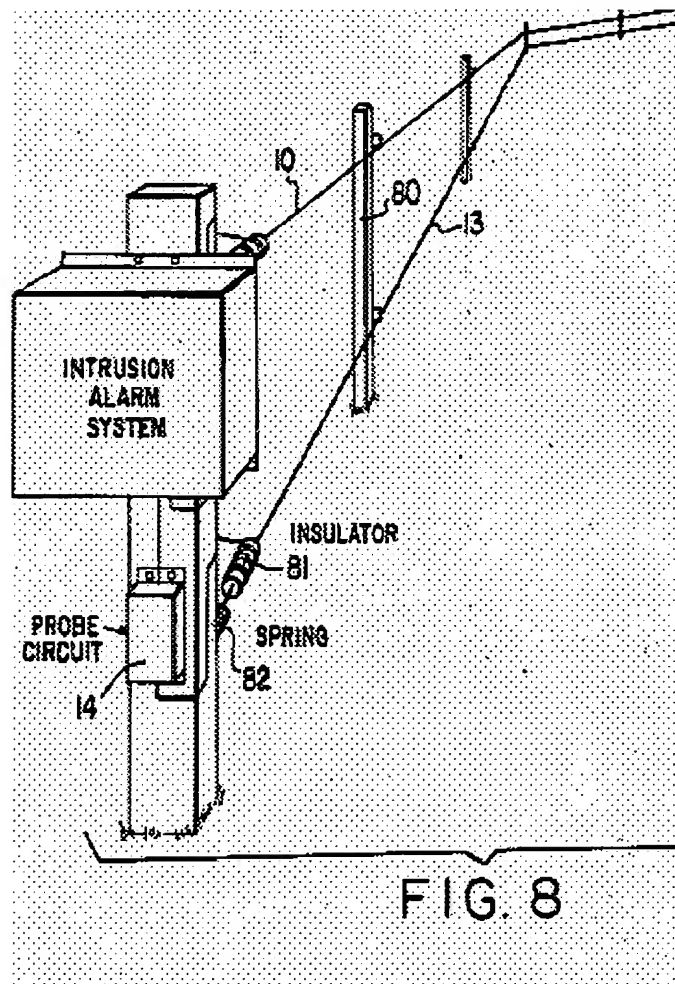
Claim Rejections - 35 USC § 103

19. Claim 60 is rejected under 35 U.S.C. 103(a) as being unpatentable over Patent No. 4,064,499 to Geiszler et al. ("Geiszler").

Regarding claim 60, Geiszler discloses an intrusion detection system comprising:

A first substrate (the ground or earth) having at least one compliant post 80 extending transversely from the ground or earth, wherein the post 80 includes a tip at the end opposite the ground or earth; and

An antennae wire 13 disposed upon a portion of the post 80, said antennae wire conducting radio frequency signals (see Abstract). Part of Figure 8 of Geiszler is shown below.



Thus, Geiszler only differs from claim 60 in that the post 80 is not shown with a non-flat tip. However, it would have been obvious to provide a non-flat tip (i.e., a rounded tip) to the post 80 of Geiszler for ornamental or aesthetic purposes.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to obtain the invention specified by claim 60.

Allowable Subject Matter

20. Claims 20-21 and 23-32 are allowed.

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21. Claims 3-5, 8, 14-19, 45-47, 50, 54-59, and 61-74 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

22. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claims 3-5, 8, 14, 18, 19, 45-47, 50, 54, 58, and 59, the primary reason for allowance of the claims is the inclusion of the recited physical dimension(s) for the compliant pillar(s)/socket(s) and/or the recited density per square centimeter of the pillars/sockets. Both features are directly related to the size of the pillars and/or sockets are not considered obvious in view of Byers. In particular, Byers discloses a gap of $\frac{1}{4}$ to $\frac{1}{2}$ inch between the circuit boards (102, 104) in column 3, lines 1-2. Such a gap would appear to preclude any inclusion of the features recited by claims 3-5, 8, 14, 18, 19, 45-47, 50, 54, 58, and 59 since the gap would presumably require the use of much larger sized light pipes in Byers.

Regarding claims 15-17, 20-21, 23-32, and 55-57, the primary reason for allowance of the claims is the inclusion of a lead disposed upon a portion of the pillar. Although it would appear possible to modify Byers by disposing a metal lead on the light pipes, no additional teaching is available at this time to provide some hint or suggestion for this modification such that a rejection under 35 U.S.C. § 103 would be considered proper. The Geiszler reference, for example, appears to be sufficiently non-analogous art so as to preclude combining it with Byers. Accordingly, claims 15-17, 20-21, 23-32, and 55-57 are considered to include allowable subject matter.

Regarding claims 61-74, each of the recited claims include a particular feature that is considered patentable over the Geiszler reference.

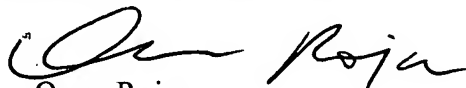
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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Omar Rojas whose telephone number is (571) 272-2357. The examiner can normally be reached on Monday-Friday (12:00PM-8:00PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rod Bovernick, can be reached on (571) 272-2344. The official facsimile number for regular and After Final communications is (571) 273-8300. The examiner's RightFAX number is (571) 273-2357.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Omar Rojas
Patent Examiner
Art Unit 2874

or
November 14, 2005

Michelle R. Connelly-Cushwa
MICHELLE CONNELLY-CUSHWA
PRIMARY EXAMINER
11/14/05